UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,857	09/25/2003	Gopal Dommety	CISCP345	1271

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EXAMINER
CHEA, PHILIP J

ART UNIT	PAPER NUMBER
2153	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/672,857	DOMMETY ET AL.
	Examiner	Art Unit	
	Philip J. Chea	2153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>28 September 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-21</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-21</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>28 September 2007</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to an Amendment filed September 28, 2007. Claims 1-21 are

currently pending. Any rejection not set forth below has been overcome by the current Amendment.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohba et al. (US

2004/0098588), herein referred to as Ohba.

As per claims 1,14-16, Ohba discloses a method for performing layer 2 authentication of a Mobile

Node supporting Mobile IP, as claimed, comprising:

obtaining layer 2 information including at least one of a MAC address and username associated

with the Mobile Node (see paragraph 36, where a user device may connect through 802.11 and

authentication may be accomplished at layer 2 and a MAC address is implicit of layer 2, also see end of

paragraph 37, where username/password can be used for authentication);

generating an orphaned host object including the layer 2 information (see paragraph 36, where

the MCS server may maintain the credentials of the user used to authenticate the user);

unorphaning the orphaned host object, thereby enabling layer 3 policies to be enforced (see

paragraph 39, where a TLS session identifier from layer 2 authentication may be used for layer 3

authentication).

Although the system disclosed by Ohba shows substantial features of the claimed invention

(discussed above), it fails to disclose that the unorphaning occurs when an IP address associated with

the layer 2 information is received such that the unorphaned host object includes the IP address and layer

2 information, wherein the IP address associated with the layer 2 information is received without performing layer 3 authentication of the Mobile Node.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Ohba, as evidenced by Droms et al. ("Radius Attributes Sub-option for the DHCP Relay Agent Information Option").

In an analogous art, Droms discloses a system for authenticating a network device before granting that device access to the network by providing authenticated layer 2 network access (see Abstract). Also, Droms discloses that a network element using RADIUS as an authentication authority will receive attributes from a RADIUS server that may be used by a DHCP server in the selection of an IP address for assignment to the device (see Abstract). Furthermore, Droms shows that a RADIUS Attributes sub-option provides a way through which network elements can pass information obtained through layer 2 authentication to a DHCP server (see "Introduction and Background").

Given the teaching of Droms, it would be obvious to a person having ordinary skill in the art to perform layer 2 authentication by associating an IP address with layer 2 information provided by a RADIUS server without performing layer 3 authentication of the device (i.e. Mobile Node), such as disclosed by Droms, in order to allow or deny network access to the requesting device.

As per claim 2, Ohba further discloses obtaining a username associated with the Mobile Node;

wherein the orphaned host object includes the username associated with the mobile node (see paragraph 37).

As per claim 3, Ohba further discloses receiving the layer 2 information in an access request packet;

wherein generating the orphaned host object is performed when an access accept packet is received indicating the Mobile Node associated with the layer 2 information has been authenticated by a AAA server (see paragraph 36).

As per claim 4, Droms further renders obvious that unorphaning the orphaned host object comprises:

receiving a packet including the IP address and the layer 2 information; and updating the orphaned host object to include the IP address, thereby generating an unorphaned host object (see discussion above regarding how the RADIUS server provides the layer 2 authentication and allows a DHCP server to select an IP address for the network device).

As per claim 5, Ohba does not expressly disclose receiving an ACCT start packet. However, Ohba does show that session information is shared by authentication and that the AAA server uses the RADIUS protocol. At the time of the invention, a person having ordinary skill in the art would have found it obvious to use ACCT start packets when enabling layer 3 policies after associating an IP address with layer 2 information in order to keep track of authentication, authorization and accounting.

As per claim 6, Ohba further renders obvious receiving an ACCT stop packet including the IP address; and

deleting the unorphaned host object when the ACCT stop packet is received (see paragraph 49). Considering that it would be obvious to use an ACCT start packet to keep track of authentication, authorization and accounting, it would also be obvious to a person having ordinary skill in the art at the time of the invention to issue an ACCT stop packet in order to prevent someone else from maliciously using session information.

As per claim 7, Ohba further discloses deleting the unorphaned host (see paragraph 49).

As per claim 8, Ohba further renders obvious receiving an ACCT stop packet including the IP address;

wherein deleting the unorphaned host object is performed when the ACCT stop packet is received (see rejection of claim 6).

As per claim 9, Ohba further discloses an IP address of a network device from which the packet was received, the method further comprising:

maintaining a mapping between the IP address of the network device and the IP address of the Mobile Node such that a mapping of one or more Mobile Nodes supported by the network device is maintained (see paragraph 36, where a mapping of the IP address of the network device (MCS server) and the IP address of the Mobile Node is an implied by using the RADIUS protocol).

As per claim 10, Ohba further renders obvious that the packet including the IP address and the layer 2 information is an ACCT start packet (see paragraph 36, where it is obvious that an ACCT start packet is used because the RADIUS protocol is used).

As per claim 11, Ohba further renders obvious receiving a packet including the IP address of the network device that indicates that the network device is not functioning (see paragraph 49, where it is obvious that an identifier like an IP address would be used to indicate which device has the error); and

deleting the unorphaned host object or orphaning a host object for each of the Mobile Nodes supported by the network device (see discussion of claim 6).

As per claim 12, Ohba further renders obvious that the packet including the IP address of the network device that indicates that the network device is not functioning is an ACCT-OFF packet. Considering that the RADIUS protocol may be used, it would have been obvious to a person having ordinary skill in the art that an ACCT-OFF packet is used to indicate a device is shutdown or in this case not functioning so is shutting down.

As per claim 13, Ohba further renders obvious that the IP address of the network device that indicates that the network device is not functioning is an ACCT-ON packet. Considering that the RADIUS protocol is used and the device is not functioning, it would have been obvious to a person having ordinary skill in the art that when the device is not functioning a reboot would try and correct the problem and then the device would send out an ACCT-ON packet in order to inform the RADIUS protocol it is ready to accept incoming connections.

As per claim 17, Droms further discloses enforcing layer 3 policies based upon the layer 2 authentication of the Mobile Node (see Abstract, where IP address authentication by layer 2 authentication implies layer 3 policy).

As per claim 18, Droms further discloses enforcing layer 3 policies without performing layer 3 authentication (see Abstract, discussing how layer 2 authentication is used in conjunction with an IP address to give access to the network).

As per claim 19, Droms further discloses enforcing layer 3 policies by accessing the unorphaned host object (see Abstract, wherein once the layer 2 attributes from the RADIUS server are received by the

DHCP server and an IP address is assigned based on the layer 2 authentication, the host object is unorphaned and layer 3 policies are enforced because there is an IP address that has already been authenticated using layer 2).

As per claim 20, Droms further discloses enforcing layer 3 policies based upon the IP address of the unorphaned host object (see discussion for claim 19).

3.   Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohba in view of Droms as applied to claim 1 above, and further in view of Applicants Admitted Prior Art (AAPA).

Although the system disclosed by Ohba in view of Droms shows substantial features of the claimed invention (discussed above), it fails to disclose that the method is performed in an SSG based network.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Ohba in view of Droms, as evidenced by AAPA.

In an analogous art, AAPA discloses how various system can be used for authentication of a Mobile Node. For instance a service selection gateway (SSG) (see Specification page 4, lines 13-16).

Given the teaching of AAPA, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Ohba in view of Droms by employing an SSG based network, such as disclosed by AAPA, in order to take advantage of SESM solutions such as authentication of the user, policy enforcement, etc.

Response to Arguments

4.   Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.
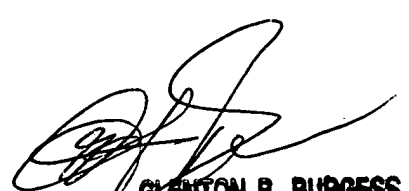
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip J. Chea whose telephone number is 571-272-3951. The examiner can normally be reached on M-F 6:30-4:00 (1st Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on 571-272-3949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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